

REMARKS

The Final Office Action mailed March 10, 2009 and the references cited therein have been carefully considered. Additionally, the Advisory Action mailed July 24, 2009 has been carefully considered. Claims 1-17 are now pending in the application, although Claims 1-9 are withdrawn from consideration.

An amendment to Claim 10 is presented herein. Applicant has hereby amended Claim 10 to clarify aspects of the claimed invention. In particular, the activation of the blowing agent occurs during both the introduction and the heating of the mass. Also, with regard to the reduction of pressure, the intent of the original claim language was to recite that the pressure inside the mold is reduced once (when) the mold is substantially filled, as opposed to a pressure reduction before the mold is substantially filled. Thus, Applicant has replaced the word “when” with the word “after” to clarify this aspect of the invention. Support for the amendments to Claim 10 can be found in the specification at page 4, lines 4-6 and page 4, line 30 to page 5, line 6. Additionally, Claim 13 has been amended to clarify that the different pressures are generated by independent means. Support for the amendment to Claim 13 can be found in the specification at page 7, lines 21-28 and page 10, lines 19-23. Further, new Claims 18 and 19 are hereby presented. Support for new Claim 18 can be found in the specification at page 14, lines 20-23 and page 18, in Table 1. Support for new Claim 19 can be found in the specification at page 14, line 14. Accordingly, no new matter is introduced by these amendments.

Further, Applicant respectfully requests that new Claims 18 and 19 be examined along with the previously elected subject matter defined by Claims 10-17 (Group II). This election is made without traverse.

Applicants respectfully request reconsideration of the pending rejections and the issues addressed below.

Claim Rejections under 35 USC § 103(a)

In the Office Action, Claims 10-14 and 16 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,251,318 to Arentsen et al. (**Arentsen**) in view of U.S. Patent No. 3,970,732 to Slaats et al. (**Slaats**). Also, Claims 15 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Arentsen in view of Slaats and further in view of U.S. Patent No. 5,059,376 to Pontiff et al. (**Pontiff**). The Office Action contends that the combination of Arentsen and Slaats or the combination of Arentsen, Slaats and Pontiff disclose all the features of the rejected claims. Applicant respectfully traverses these rejections.

The Final Office Action relies on Slaats for teaching “using reduced pressure to vaporize the blowing agent at a lower temperature.” In this regard Slaats discloses that “the molding material may be supplied to the mold cavity and the mold cavity immediately evacuated by opening valve 64” (Slaats, Col. 4, lines 63-66). However, in Slaats the activation of the blowing agent is specifically tied to the reduced (subatmospheric) pressure. Thus, if the mold is evacuated after filling, then the blowing agent can NOT be activated both “*during the introduction and heating of the mass*” as currently recited in Claim 10. In that case the Slaats blowing agent is not activated

during introduction. Alternatively, Slaats indicates that the pressure can first be reduced then the material supplied (Slaats, Col. 4, lines 66-68). However, Claim 10 now recites that the pressure is reduced “**after** the mold is substantially filled,” thus this alternative scenario is inapplicable. Further, after the initial reduction of pressure, while Slaats discloses “maintaining” subatmospheric pressure, there is no teaching or suggestion of further reducing the pressure in the mold cavity. Accordingly, it can not be said that Slaats discloses or reasonably suggests both reducing the pressure after the mold is substantially filled, while also having the blowing agent activated prior to the pressure reduction.

Further, one of ordinary skill would not simply apply a pressure reduction technique as disclosed by Slaats, after already having activated the blowing agent by heating. It is admitted in the Advisory Action that “*Slaats teaches the improvement of the rate of foaming while reducing the deformation and warping of the article and maintaining uniformity by reducing the temperature at which the blowing agent activates.*” However, Slaats does not teach reducing the temperature at which the blowing agent activates, after it has already been activated. An application of heat prior to the reduction in pressure would create higher pressure gas bubbles and is contrary to the teachings of Slaats (Slaats, Col. 5, lines 17-21). Thus, Slaats clearly teaches away from applying enough heat to the mass to activate the blowing agent prior to exposing the blowing agent to the subatmospheric reduced pressures. Also, although Slaats teaches a pressure reduction in order to activate a blowing agent, there is clearly no disclosure of what effect such a pressure reduction would have on an already activated blowing agent or whether such a combination would have a desirable result.

Thus, the combined teaching of Arentsen and Slaats fail to disclose or reasonably suggest activating a blowing agent during the introduction and heating, while also reducing the pressure inside the mold after the mold is substantially filled, as recited in Claim 10. Accordingly, one of ordinary skill would not arrive at the claimed invention by combining the teachings of Arentsen and Slaats in this regard.

The Advisory Action indicates that the Examiner has interpreted Applicant's prior remarks to suggest that "a reduced pressure has nothing to do with a boiling point of a blowing agent." It is important to note that this is neither what was said nor what was meant by Applicant's arguments. What was argued and is once again asserted here is that while Slaats discloses an evacuated mold cavity (i.e., a reduced pressure therein), it does not specify that the pressure reduction is correlated to the boiling point of the blowing agent. Rather, the Slaats pressure reduction is correlated and limited to atmospheric pressure (Slaats, Col. 5, lines 22-25, merely suggesting the evacuated pressure as being "subatmospheric pressure").

Moreover, the Final Office Action argues with respect to Claims 13 and 14 that the rate of flow and pressure of material in each deaeration channel would be different because of their varied proximity to the injection port. However, it should be noted that even if that is the case, such a minute pressure differential would clearly be interdependent. Applicant has hereby amended Claim 13 (Claim 14 is dependent on Claim 13) in order to clarify an aspect of the subject invention relating to intentionally setting independently different pressures and/or flow resistances in this regard. Accordingly, Arentsen fails to disclose or reasonably suggest this aspect of the disclosed technologies.

Applicant therefore requests reconsideration of withdrawal of the rejections under 35 U.S.C. 103(a) based on any combination of Arentsen, Slaats or Pontiff.

Conclusion

Accordingly, favorable reconsideration of Claims 10-19 are hereby solicited. In view of the foregoing remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested.

If the Examiner has any questions or suggestions to expedite allowance of this application, he is cordially invited to contact Applicant's attorney at the telephone number provided.

Respectfully submitted,

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